

REMARKS

In the Final Office Action, the Examiner rejected all pending claims 1 and 4-29. By this paper, claims 24, 26, 28, and 29 are amended to correct grammatical errors. Applicants respectfully request the Examiner enter these amendments. Further, in view of the following remarks, Applicants respectfully request reconsideration and allowance of all pending claims.

Claim Rejections under 35 U.S.C. § 102

In the Final Office Action, the Examiner rejected claims 1 and 4-29 under U.S.C. § 102(b) as anticipated by Pieper et al. (U.S. Patent No. 5,825,908). Applicants respectfully traverse this rejection.

Legal Precedent

Anticipation under section 102 can be found only if a single reference shows exactly what is claimed. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 U.S.P.Q. 773 (Fed. Cir. 1985). Every element of the claimed invention must be identically shown in a single reference. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). Indeed, the prior art reference must show the identical invention “in as complete detail as contained in the ... claim” to support a *prima facie* case of anticipation. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989).

Furthermore, the pending claims must be given an interpretation that is reasonable and consistent with the specification. See *In re Prater*, 415 F.2d 1393, 1404-05, 162 U.S.P.Q. 541, 550-51 (C.C.P.A. 1969); see also *In re Morris*, 127 F.3d 1048, 1054-55, 44 U.S.P.Q.2d 1023, 1027-28 (Fed. Cir. 1997); see also M.P.E.P. §§ 608.01(o) and 2111. Indeed, the specification is “the primary basis for construing the claims.” See *Phillips v. AWH Corp.*, 75 U.S.P.Q.2d 1321, 1326 (Fed. Cir. 2005) (*en banc*) (citations omitted). One should rely heavily on the written description for guidance as to the meaning of the claims. See *id.*

Brief Summary of Present Application

In accordance with embodiments of the present technique, a navigational tool may be provided for selection of images in a series of images. *See* Specification, ¶ [0007]. For example, in medical imaging, a large number of images (e.g., hundreds or thousands of images) may be acquired in a single imaging session or in multiple imaging sessions over time. *See* Specification, ¶¶ [0002]-[0004]. Cine mode viewing of these images may be excessively time-consuming. *See* Specification, ¶ [0005].

A navigational tool in accordance with embodiments of the present technique may include a scout tool which illustrates the amount of change from one image to the next. *See* Specification, ¶ [0041]. The amount of change may be represented by a difference index, which may be computed using various mathematical techniques. *See* Specification, ¶ [0042]. The scout tool may be illustrated as a graph in which the difference index between consecutive (e.g., spatially or chronologically adjacent) pairs of slices is charted. *See* Specification, ¶ [0045]; FIG. 6. A caregiver may use the scout image to determine which images show the most relative variance, which may indicate an anomaly in the images. *See* Specification, ¶ [0038]. Furthermore, the caregiver may access the images of interest by using a virtual tool to move directly to the images corresponding to the desired relative variance. *See* Specification, ¶ [0045].

Elements of Independent Claim 1 Missing from the Cited Reference

Accordingly, independent claim 1 recites, *inter alia*, “characterizing a level of change of the image data from one image to the next in the plurality of images; and presenting a viewer with indicia of relative levels of change of the image data for the plurality of images.” (Emphasis added).

In sharp contrast, the Pieper reference discloses a system for scrolling through a series of images and switching between axial, coronal, and sagittal views of an imaged object. Rather than anticipating the present claims, the Pieper reference is an example of the extremely time-consuming image review method which the present invention aims to improve. Specifically, the

Pieper reference provides a system for scrolling through images in three dimensions but does not provide any reference for determining which images may be of most interest to a caregiver.

In reference to the claimed “indicia of relative levels of change,” the Examiner stated:

The level of change between these images is evident in that each slice is slightly different from the last and that each slice represents a change in position in the 3D model. ... When the user views the slices by sliding back and forth this is considered an indicia of levels of change of the plurality of images.

Final Office Action, page 3. This evaluation is clearly erroneous. In effect, the Examiner is saying that the prior art technique of scrolling through thousands of images is the same as providing a navigation tool which enables the caregiver to go directly to images of interest without scrolling through thousands of images. The present claim requires presenting a viewer with some indication of the level of change between two or more images. Simply showing the viewer adjacent images does not provide an indication of the level of change between the images. Even if the viewer can discern differences between two images, the relative level of change between the images and between other image pairs is not “evident” to the naked eye. Additionally, the images themselves cannot be indicia of changes between the images. Indicia, or indications, may be defined as “something that serves to indicate,” or “something that serves to point out or point to.” MERRIAM-WEBSTER’S COLLEGIATE DICTIONARY 634 (11th Ed. 2003). Clearly, a series of images does not serve to point out the levels of changes between the images. Rather, a characterization may point out the levels of change between adjacent images, as recited in the present claim. Accordingly, the Pieper reference cannot anticipate independent claim 1 or its dependent claims.

Furthermore, the Examiner cited a passage from the Pieper reference which purportedly discloses the recited “indicia of relative levels of change.” This passage states:

Computer 50 is programmed so that the physician can select between different slice images by means of input devices 55. By way of example, FIG. 11 illustrates a 2-D slice image drawn to a

window by the operating system using the data contained in second section 40 of data storage device or medium 30. In this case, computer 50 is programmed so that, by dragging icon 70 back and forth along slider 75, the physician can "leaf" back and forth through the collection of axial slices, i.e., in the example of FIG. 11, in which axial slice #21 is displayed, dragging icon 70 to the left might cause axial slice #20 to be displayed, and dragging icon 70 to the right might cause axial slice #22 to be displayed. Additionally, computer 50 is preferably programmed so that the physician can also step the image from the current slice number to a previous or following slice number by using menu commands or by clicking the mouse cursor on the single step icons 76 set at the right side of slider 75. Computer 50 is preferably also programmed so that menu commands are provided to change the slice window display directly to the first or last slice image in the 2-D slice image set, or to change the slice window display to a user-specified slice number. Programming to effect such computer operation is of the sort well known in the art.

Pieper, col. 13, lines 10-32 (emphasis added). Nothing in the cited reference discloses or even hints at “characterizing a level of change of the image data from one image to the next” or “presenting a viewer with indicia of relative levels of change of the image data for the plurality of images” as recited in independent claim 1 (emphasis added). On the contrary, this passage describes the time-consuming review method on which, again, the present technique is designed to avoid or improve.

In view of these deficiencies, among others, the cited reference cannot anticipate independent claim 1 and its dependent claims. For at least these reasons, Applicants respectfully request withdrawal of the rejection of independent claim 1 and its dependent claims under 35 U.S.C. § 102.

Elements of Independent Claim 9 Missing from the Cited Reference

Independent claim 9 recites, *inter alia*, “generating a scout navigation tool by characterizing a level of change of the image data from one reconstructed image to the next in the plurality of reconstructed images, the scout navigation tool including a graphical representation of

progressive change between reconstructed images of the plurality of reconstructed images.”
(Emphasis added).

In rejecting independent claim 9, the Examiner cited the same portion of the Pieper reference as in the rejection of claim 1, reproduced above. Furthermore, the Examiner stated, “The level of change between these images is evident in that each slice is slightly different from the last and that each slice represents a change in position in the 3D model. This is interpreted as a graphical representation of progressive change.” Final Office Action, page 6. Again, the Examiner’s interpretation of the cited reference is clearly erroneous and even nonsensical. As discussed above, the Pieper reference does not even disclose characterizing the level of change between images as recited in the present claim. Accordingly, nothing in the Pieper reference discloses or suggests generating a graphical representation of the characterized level of change between images. The Examiner’s assertion that scrolling through a series of images is equivalent to generating a graphical representation cannot be sustained.

In view of these deficiencies, among others, the cited reference cannot anticipate independent claim 9 and its dependent claims. For at least these reasons, Applicants respectfully request withdrawal of the rejection of independent claim 9 and its dependent claims under 35 U.S.C. § 102.

Elements of Independent Claim 20 Omitted from the Cited Reference

Independent claim 20 recites, *inter alia*, “processing circuitry configured ... to generate a scout navigation tool by characterizing a level of change of the image data from one image to the next in the plurality of images, the scout navigation tool including a graphical representation of progressive change between images of the plurality of images.” (Emphasis added)

As discussed above, the Examiner’s interpretation of the Pieper reference is clearly erroneous. Scrolling through a series of images does not anticipate circuitry configured to generate a graphical representation of characterized levels of change between images as recited in the present claim. In view of these deficiencies, among others, the cited reference cannot anticipate

independent claim 20 and its dependent claims. For at least these reasons, Applicants respectfully request withdrawal of the rejection of independent claim 20 and its dependent claims under 35 U.S.C. § 102.

Elements of Independent Claim 24 Missing from the Cited Reference

Independent claim 24 recites, *inter alia*, “means for characterizing a level of change of the image data from one image to the next in the plurality of images; and means for presenting a viewer with indicia of relative levels of change of the image data for the plurality of images.” (Emphasis added).

Applicants respectfully note that independent claim 24 includes means-plus-function language, as set forth in 35 U.S.C. § 112, paragraph 6, and should be examined in accordance with this body of law. As may be appreciated, with respect to 35 U.S.C. § 112, paragraph 6, an Examiner “may not disregard the structure disclosed in the specification corresponding to such language when rendering a patentability determination.” *In re Donaldson Co.*, 29 U.S.P.Q.2d 1845 (Fed. Cir. 1994); *see also* Manual of Patent Examining Procedure § 2181. Applicants respectfully note that the present rejection does not comport with the controlling case law or M.P.E.P. sections and is, therefore, deficient. Accordingly, the Examiner has failed to establish a *prima facie* case of unpatentability in accordance with the relevant statutory and precedential authority outlined above.

Furthermore, as discussed above, the Examiner’s rejection of independent claim 24 is based on an erroneous and nonsensical interpretation of the Pieper reference. Specifically, nothing in the Pieper reference discloses or anticipates any means for characterizing the level of change between images as recited in the present claim. Clearly, therefore, the viewer cannot be presented with indicia of the characterized levels of change. In view of these deficiencies, among others, the cited reference cannot anticipate independent claim 24. For at least these reasons, Applicants respectfully request withdrawal of the rejection of independent claim 24 under 35 U.S.C. § 102.

Elements of Independent Claim 25 Missing from the Cited Reference

Independent claim 25 recites, *inter alia*, “means for generating a scout navigation tool by characterizing a level of change of the image data from one image to the next in the plurality of images, the scout navigation tool including a graphical representation of progressive change between images of the plurality of images.” (Emphasis added).

As with independent claim 24, independent claim 25 includes means-plus-function language, as set forth in 35 U.S.C. § 112, paragraph 6. Accordingly, claim 25 should be examined in accordance with that body of law, as set forth in the controlling case law and M.P.E.P. sections. As the Examiner has not performed the required analysis, the Examiner has failed to establish a *prima facie* case of unpatentability in accordance with the relevant statutory and precedential authority outlined above.

Furthermore, as discussed above, the Pieper reference clearly does not anticipate independent claim 25. The cited reference does not teach or suggest means for generating a graphical representation of characterized levels of change between adjacent images in a series as recited in the present claim. In view of these deficiencies, among others, the cited reference cannot anticipate independent claim 25. For at least these reasons, Applicants respectfully request withdrawal of the rejection of independent claim 25 under 35 U.S.C. § 102.

Elements of Independent Claim 26 Missing from the Cited Reference

Independent claim 26 recites, *inter alia*, “code stored on the at least one computer readable medium encoding routines for ... characterizing a level of change of the image data from one image to the next in the plurality of images, and presenting a viewer with indicia of relative levels of change of the image data for the plurality of images.” (Emphasis added).

As discussed above, the Examiner’s interpretation of the Pieper reference is clearly erroneous. The cited reference does not disclose “characterizing a level of change of the image data from one image to the next” as recited in the present claim and therefore clearly cannot disclose code for performing such an action. Furthermore, no indicia of such characterized levels of change

are presented to the viewer as recited in the present claim. In view of these deficiencies, among others, the cited reference cannot anticipate independent claim 26. For at least these reasons, Applicants respectfully request withdrawal of the rejection of independent claim 26 under 35 U.S.C. § 102.

Elements of Independent Claim 27 Missing from the Cited Reference

Independent claim 27 recites, *inter alia*, “code stored on the at least one computer readable medium encoding routines for ... generating a scout navigation tool by characterizing a level of change of the image data from one image to the next in the plurality of images, the scout navigation tool including a graphical representation of progressive change between images of the plurality of images.” (Emphasis added).

Again, the Examiner’s rejection of independent claim 27 based on the Pieper reference cannot be sustained. The Pieper reference clearly does not teach or disclose characterization of the levels of change between images or graphical representation of such characterizations. In view of these deficiencies, among others, the cited reference cannot anticipate independent claim 27. For at least these reasons, Applicants respectfully request withdrawal of the rejection of independent claim 27 under 35 U.S.C. § 102.

Conclusion

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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/Floron C. Faries/
Floron C. Faries
Reg. No. 59,991
FLETCHER YODER
P.O. Box 692289
Houston, TX 77269-2289
(281) 970-4545